Part 2 — Technical Requirements

NRCB Natural Resources Conservation Board

Application under the *Agricultural Operation Practices Act* for a confined feeding operation, manure collection area, and/or manure storage facility(ies)

NRCB USE ONLY	Application number	Legal land description
☒ Approval ☐ Registration ☐ Authorization ☐ Amendment	LA25034	SW 35-8-19 W4M

APPLICATION DISCLOSURE

This information is collected under the authority of the *Agricultural Operation Practices Act* (AOPA), and is subject to the provisions of the *Freedom of Information and Protection of Privacy Act*. This information is public unless the NRCB grants a written request that certain sections remain private.

Any construction prior to obtaining an NRCB permit is an offence and is subject to enforcement action, including prosecution.

I, the applicant, or applicant's agent, have read and understand the statements above, and I acknowledge that the information provided in this application is true to the best of my knowledge.

May 2 /2025
Date of signing

[redacted]
Signature

Vita Farms Ltd
Corporate name (if applicable)

Wayne Kempart
Print name

GENERAL INFORMATION REQUIREMENTS

Proposed facilities: list all proposed confined feeding operation facilities and their dimensions. Indicate whether any of the proposed facilities are additions to existing facilities. (attach additional pages if needed)

Proposed facilities	Dimensions (m) (length, width, and depth)
New lagoon Earthen manure storage (EMS)	64m, 45m, ~~6m~~ 7 m deep
Finishing Barn	~~74~~m, 25m x 1.3 m deep
fill in old lagoon Existing EMS to be decommissioned	45m, 20m, 6m deep

Existing facilities: list **ALL** existing confined feeding operation facilities and their dimensions

Existing facilities	Dimensions (m) (length, width, and depth)	NRCB USE ONLY
Sow barn / Nursery	~~40~~ 12m x 90m	
farrowing	16m x 21.5m	
furrowing / grower	16m x 80m	

NRCB USE ONLY

Confirmed existing CFO facilities

Last updated September 11, 2023

Part 2 — Technical Requirements

NRCB Natural Resources Conservation Board

Application under the *Agricultural Operation Practices Act* for a confined feeding operation, manure collection area, and/or manure storage facility(ies)

Existing facilities continued	Dimensions (m) (length, width, and depth)	NRCB USE ONLY
Lagoon	45m x 20m x 6m deep	To be decommissioned
Feed mill	9m x 12	Ancillary facility

Last updated September 11, 2023

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If a new facility is replacing an old facility, please explain what will happen to the old facility and when. ☒ N/A

Old facility filled in with clay and barn constructed on top. (old facility is lagoon)

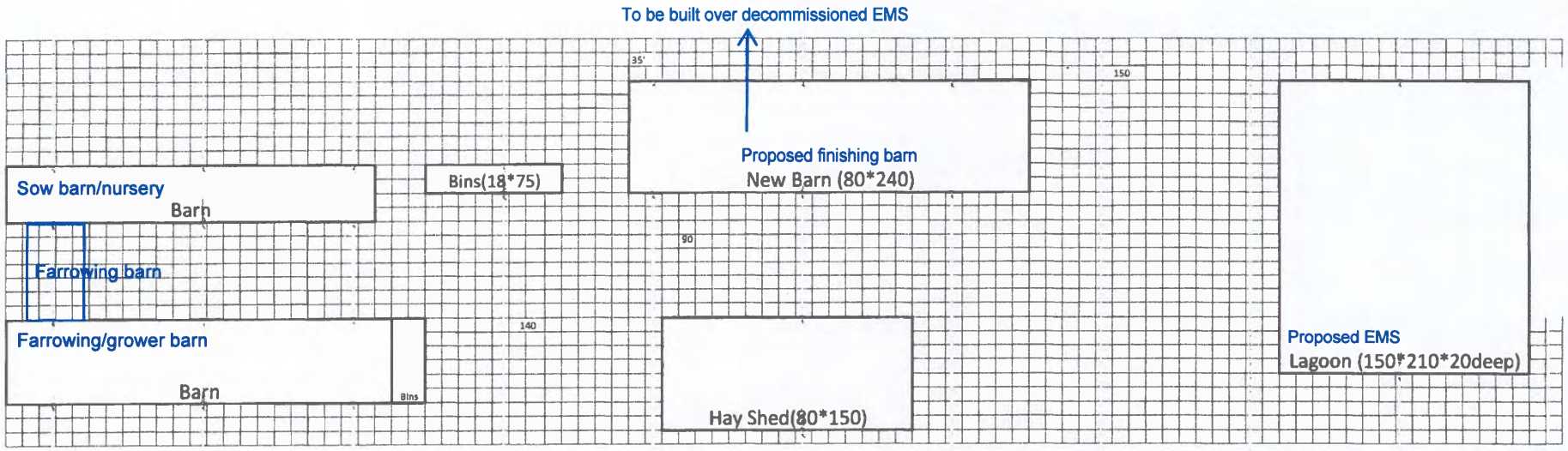
Construction completion date for proposed facilities June 2026

Additional information

Livestock numbers: Complete only if livestock numbers are different from what was identified in the Part 1 application. Note: if livestock numbers increase in your Part 2 application, a new Part 1 application must be submitted which may result in a loss of priority for minimum distance separation (MDS).

Livestock category and type (Available in the Schedule 2 of the Part 2 Matters Regulation)	**Permitted number**	**Proposed increase or decrease in number (if applicable)**	**Total**
No changes from part 1 application			
Sows - farrow to finish	200	200	400
Municipal development permit 91-82 specifies a	200 sow farrow-to-finish	operation	

Last updated September 11, 2023


To be built over decommissioned EMS
35'
150
Proposed finishing barn
New Barn (80*240)
Sow barn/nursery
Barn
Bins(18*75)
Farrowing barn
90
140
Farrowing/grower barn
Barn
Bins
Hay Shed(80*150)
Proposed EMS
Lagoon (150*210*20deep)
N


#2
This is a shop, not a residence
#1
MQS Athens
#3
#4
680 m from CFO
Google Earth
N
706 m

Part 2 — Technical Requirements

NRCB Natural Resources Conservation Board

Application under the *Agricultural Operation Practices Act* for a confined feeding operation, manure collection area, and/or manure storage facility(ies)

DECLARATION AND ACKNOWLEDGMENT OF APPLICANT CONCERNING *WATER ACT* LICENCE
issued by Alberta Environment and Protected Areas (EPA) for a confined feeding operation (CFO)
Date and sign one of the following four options

OPTION 1: Applying through the NRCB for both the AOPA permit and the *Water Act* licence

I **DO** want my water licence application coupled to my AOPA permit application.

Signed this ____day of _____, 20____. _____
Signature of Applicant or Agent

OPTION 2: Processing the AOPA permit and *Water Act* licence separately

1. I (we) acknowledge that the CFO will need a new water licence from EPA under the *Water Act* for the development or activity proposed in this AOPA application.
2. I (we) request that the NRCB process the AOPA application **independently of** EPA's processing of the CFO's application for a water licence.
3. In making this request, I (we) recognize that, if this AOPA application is granted by the NRCB, the NRCB's decision will not be considered by EPA as improving or enhancing the CFO's eligibility for a water licence under the *Water Act*.
4. I (we) acknowledge that any construction or actions to populate the CFO with livestock pursuant to an AOPA permit in the absence of a *Water Act* licence will **not** be relevant to EPA's consideration of whether to grant the *Water Act* licence application.
5. I (we) acknowledge that any such construction or livestock populating will be at the CFO's sole risk if the *Water Act* licence application is denied or if the operation of the CFO is otherwise deemed to be in violation of the *Water Act*. This risk includes being required to depopulate the CFO and/or to cease further construction, or to remove "works" or "undertakings" (as defined in the *Water Act*).
6. **AS RELEVANT:** I (we) acknowledge that the CFO is located in the South Saskatchewan River Basin and that, pursuant to the *Bow, Oldman and South Saskatchewan River Basin Water Allocation Order* [Alta. Reg. 171/2007], this basin is currently closed to new surface water allocations.
7. **Provide:** Water licence application number(s) _____

Signed this ____ day of _____, 20____. _____
Signature of Applicant or Agent

OPTION 3: Additional water licence not required

1. I (we) declare that the CFO will not need a new licence from EPA under the *Water Act* for the development or activity proposed in this AOPA application.
2. **Provide**: Water license number(s) or water conveyance agreement details _____

Signed this ____ day of _____, 20____. _____
Signature of Applicant or Agent

OPTION 4: Uncertain if *Water Act* licence is needed; acknowledgement of risk (for existing CFOs only)

1. At this time, I (we) do not know whether a new water licence is needed from EPA under the *Water Act* for the development or activity proposed in this AOPA application.
2. If a new *Water Act* licence is needed, I (we) request that the NRCB process the AOPA application **independently of** EPA's processing of the CFO's application for a water licence.
3. In making this request, I (we) recognize that, if this AOPA application is granted by the NRCB, the NRCB's decision will not be considered by EPA as improving or enhancing the CFO's eligibility for a water licence under the *Water Act*.
4. I (we) acknowledge that any construction or actions to populate the CFO with additional livestock pursuant to an AOPA permit in the absence of a *Water Act* licence will **not** be relevant to EPA's consideration of whether to grant my *Water Act* licence application, if a new water licence is needed.
5. I (we) acknowledge that any such construction or livestock increase will be at the CFO's sole risk if the *Water Act* licence application is denied or if the operation of the CFO is otherwise deemed to be in violation of the *Water Act*. This risk includes being required to depopulate the CFO and/or to cease further construction, or to remove "works" or "undertakings" (as defined in the *Water Act*).
6. **AS RELEVANT:** I (we) acknowledge that the CFO is located in the South Saskatchewan River Basin and that, pursuant to the *Bow, Oldman and South Saskatchewan River Basin Water Allocation Order* [Alta. Reg. 171/2007], this basin is currently closed to new surface water allocations.
7. **Provide**: Water license number(s) or water conveyance agreement details SMRID # 135616

Signed this 28 day of April, 2025.

[redacted]

Signature of Applicant or Agent

Part 2 — Technical Requirements

NRCB Natural Resources Conservation Board

Application under the *Agricultural Operation Practices Act* for a confined feeding operation, manure collection area, and/or manure storage facility(ies)

GENERAL ENVIRONMENTAL INFORMATION

(complete this section for the worst case of the existing facility which is the closest to water bodies or water wells and for each of the proposed facilities)

Facility description / name *(as indicated on site plan)*

Existing: Soil / farming berms

Proposed 1: Finishing barn

Proposed 2: Lagoon EMS

Proposed 3:

Facility and environmental risk information		Facilities				NRCB USE ONLY	
		Existing	Proposed 1	Proposed 2	Proposed 3	Meets requirements	Comments
Flood plain information	What is the elevation of the floor of the lowest manure storage or collection facility above the 1:25 year flood plain or the highest known flood level?	☑ >1 m ☐ ≤ 1 m	☑ >1 m ☐ ≤ 1 m	☑ >1 m ☐ ≤ 1 m	☐ > 1 m ☐ ≤ 1 m	☑ YES ☐ NO ☐ YES with exemption	Not in a flood plain
Surface water information	How many springs are within 100 m of the manure storage facility or manure collection area?	0	0	0		☑ YES ☐ NO ☐ YES with exemption	No springs observed during site visit
	How many water wells are within 100 m of the manure storage facility or manure collection area?	0	0	0		☑ YES ☐ NO ☐ YES with exemption	No water wells registered to AB water wells database
	What is the shortest distance from the manure collection or storage facility to a surface water body? (e.g., lake, creek, slough, seasonal)	1 mile	1 mile	1 mile		☑ YES ☐ NO ☐ YES with exemption	900 m to ephermeral drain to the east
Groundwater information	What is the depth to the water table?		9m	9m		☑ YES ☐ NO ☐ YES with exemption	Saturated sand lens (water table) encountered at 9 mbgs
	What is the depth to the groundwater resource/aquifer you draw water from?		9m	9m		☑ YES ☐ NO ☐ YES with exemption	

Additional information (attach supporting information, e.g. borehole logs, records, etc. you consider relevant to your application) WWID 118249: UGR at 31 mbgs

Part 2 — Technical Requirements

NRCB Natural Resources Conservation Board

Application under the *Agricultural Operation Practices Act* for a confined feeding operation, manure collection area, and/or manure storage facility(ies)

NRCB USE ONLY

ENVIRONMENTAL RISK SCREENING INFORMATION

ERST for **proposed** facilities

Facility	Groundwater score	Surface water score	File number
Finishing barn	Low	Low	LA25034
EMS	Low	Low	LA25034

ERST for **existing** facilities

Facility	Groundwater score	Surface water score	File number
Sow barn/nursery	Low	Low	LA25034
Farrowing barn	Low	Low	LA25034
Farrowing/grower barn	Low	Low	LA25034
EMS (to be decommissioned)	Low	Low	LA25034

ERST related comments:

CFO facilties that meet or exceed AOPA requirements are presumed to pose a low risk to surface water and groundwater

Part 2 — Technical Requirements

NRCB Natural Resources Conservation Board

Application under the *Agricultural Operation Practices Act* for a confined feeding operation, manure collection area, and/or manure storage facility(ies)

NRCB USE ONLY

WATER WELL AND SURFACE WATER INFORMATION

Well IDs: WW ID 118249 - only used for determining UGR

Surface water related concerns from directly affected parties or referral agencies: ☐ YES ☑ NO

Groundwater related concerns from directly affected parties or referral agencies: ☐ YES ☑ NO

Water wells ☑ N/A

If applicable, exemption for 100 m distance requirements applied: ☐ YES ☐ NO Condition required: ☐ YES ☐ NO

Surface water ☑ N/A

If applicable, exemption for 30 m distance requirements applied: ☐ YES ☐ NO Condition required: ☐ YES ☐ NO

Water Well Exemption Screening Tool ☑ N/A

Water Well ID	Preliminary Screening Score	Secondary Screening Score	Facility

Groundwater or surface water related comments:

Part 2 — Technical Requirements

NRCB Natural Resources Conservation Board

Application under the *Agricultural Operation Practices Act* for a confined feeding operation, manure collection area, and/or manure storage facility(ies)

DISTANCE OF ANY MANURE STORAGE FACILITY (EXISTING OR PROPOSED) TO NEIGHBOURING RESIDENCES

				NRCB USE ONLY				
	Neighbour name(s)	Legal land description	Distance (m)	Zoning (LUB) category	MDS category (1-4)	Distance (m)	Waiver attached (if required)	Meets regulations
1	Varden Pol	SE 34-8-19-W4	360	Rural Ag	1	360	Yes	Yes
2	New owner	NW 35-8-19-W4	800	Rural Ag	1	840		Yes
3	Ober	SE 35-8-19-W4	1000	Rural Ag	1	975		Yes
4	Residence '4' indicated on page 5	SE 34-8-19 W4M	680	Rural Ag	1	680		Yes

See page 5 of this technical document for residences corresponding to each #

LAND BASE FOR MANURE AND COMPOST APPLICATION (complete only if an increase in livestock or manure production will occur)

				NRCB USE ONLY	
Name of land owner(s)*	Legal land description	Usable area** (ha) ~~ac~~	Soil zone ***	Usable area (ha)	Agreement attached (if required)
Kampert Farms	SW 35-8-19-W4	56 140	irrigated	53	
Kampert Farms	NW 35-8-19-W4	61 155	irrigated	61	
Kampert Farms	SE 3-9-19-W4	60 ~~155~~	irrigated	60	
Vita Farms	SW 24-8-19-W4	60 150	irrigated	55	
~~B&V Ventures~~	~~SW 2-9-19-W4~~	~~55~~	~~irrigated~~		
~~Kampert Farms~~	~~SE 10-9-19-W4~~		Total	229	

* If you are **not** the registered landowner, you must attach copies of land use agreements signed by all landowners.

** Available manure spreading area (excluding setback areas from residences, common bodies of water, water wells, etc. as identified in Agdex 096-5 Manure Spreading Regulations)

*** Brown, dark brown, black, grey wooded, or irrigated

Additional information (attach any additional information as required)

For Yard #1

Minimum Distance Separation (MDS) Waiver (declaration)

Residence owner(s) information

ALL Names on land title: POLDALE DAIRY FARM LTD

Legal land location of residence(s): SE 34-8-19

Telephone number(s)[1]: [redacted] Email address(es)[1]: [redacted]

Address(es)[1] and Postal code(s)[1]: Box 376 Coaldale T1M1M4

[1] ***Please note that personal contact information is for NRCB use ONLY and not publicly released***

I am/we are the legal landowner(s) of a residence(s) located at the above noted legal land location/address:

- I/we have read the NRCB Fact Sheet "Minimum Distance Separation (MDS) Waivers";
- I/we have discussed this application with the applicant and understand its potential impacts to our residence(s);
- I/we understand that the application **does not** meet the MDS requirement to my/our residence(s), under the *Agricultural Operation Practices Act* (AOPA);
- **I/we understand that this waiver is not valid unless signed by ALL parties identified on the land title as owners;**
- **I/we are not obligated to waive the MDS requirement to our residence(s);**
- I/we understand that if I/we choose to waive the MDS requirement, I/we can revoke the waiver, by providing written notice to the NRCB approval officer, as set out in the "Minimum Distance Separation (MDS) Waivers" Fact Sheet; and
- I/we understand that this waiver is a public document.

Having considered my/our rights, I/we hereby waive the MDS requirement to my/our residence, with respect to

Application number LA 25034.

[redacted]

Signatures of **all** residence owner(s) on title

Guy Van de Pol

Printed names of **all** residence owner(s) on title

Date: April 30 2025

Minimum Distance Separation (MDS) Waiver (declaration)

Applicant information NRCB application number: _____

Operator/operation name: Vita Farms Ltd

Address: PO Box 671 Coaldale, AB Postal Code: T1M 1M6

Legal land location of confined feeding operation: SW 35-8-19-W4

I have requested the residence owner(s) named below to waive the required minimum distance separation (MDS) to their residence for the *Agricultural Operation Practices Act* (AOPA) permit application identified above. In making this request, I have provided the owner(s) with an opportunity to review my permit application and a copy of the Natural Resources Conservation Board (NRCB) Fact Sheet "Minimum Distance Separation (MDS) Waivers" available on the NRCB website at www.nrcb.ca. I have also explained:

- The MDS requirement set out in section 3 of the Standards and Administration Regulation of AOPA. I have advised the owner(s) that section 3(6)(a) of the Standards and Administration Regulation allows this requirement to be waived by the owners of residences, if they agree in writing to grant a waiver;
- That my proposed development does not meet the required MDS to the owner's residence; and,
- That this waiver applies only to this application as described. An increase in livestock capacity, annual manure production, level of odour production, change to the site plan or change to a facility that would increase the MDS would require a new waiver.

Following is a summary of the proposed development:

- The current scope of my confined feeding operation (CFO), including the type, number, and category of livestock, if any, is:
  200 sows farrow to finish
- My application for a new AOPA permit proposes the following changes to the existing livestock category, type and/or capacity at my CFO:
  400 sows farrow to finish
- The proposed new CFO facility(ies), or changes to the existing CFO facilities, including manure storage, manure storage volume and any other pertinent details, if any, are (attach a site layout plan if available):
  New lagoon
  New finishing barn

I the applicant understand that the waiver is not valid unless ALL registered owners of the residence sign this document.

Permit Applicant: [redacted] Date: April 30 /2025
Signature

Residence owner(s) to initial: [redacted]

Part 2 — Technical Requirements

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Application under the *Agricultural Operation Practices Act* for a confined feeding operation, manure collection area, and/or manure storage facility(ies)

NRCB USE ONLY

MINIMUM DISTANCE SEPARATION

Methods used to determine distance (if applicable): Google earth

Margin of error (if applicable): +/- 3m

Requirements (m): Category 1: 602 Category 2: 802 Category 3: 1,003 Category 4: 1,604

Technology factor: ☐ YES ☑ NO

Expansion factor: ☐ YES ☑ NO

MDS related concerns from directly affected parties or referral agencies: ☑ YES ☐ NO

LAND BASE FOR MANURE AND COMPOST APPLICATION

Land base required: 134 ha irrigated

Land base listed: 237 ha irrigated

Area not suitable: 8 ha

Available area 229 ha irrigated Requirement met: ☑ YES ☐ NO

Land spreading agreements required: ☐ YES ☑ NO

Manure management plan: ☐ YES ☑ NO If yes, plan is attached: ☐

PLANS

Submitted and attached construction plans: ☐ YES ☑ NO

Submitted aerial photos: ☑ YES ☐ NO

Submitted photos: ☐ YES ☑ NO

GRANDFATHERING

Already completed: ☐ YES ☑ NO ☐ N/A

If already completed, see Appedix D of Decision Summary LA25034

Part 2 — Technical Requirements

NRCB Natural Resources Conservation Board

Application under the *Agricultural Operation Practices Act* for a confined feeding operation, manure collection area and/or manure storage facility(ies)

LIQUID MANURE COLLECTION AND/OR STORAGE: In-barn - Concrete liner

*(complete a copy of this section for **EACH** proposed in-barn liquid manure storage facility with a concrete liner)*

Facility description / name *(as indicated on site plan)*

1. Finishing barn
2.
3.

~~Manure storage capacity~~ *(use one row in the table for **~~EACH~~** in-barn storage. Attach additional pages if you require more rows)*

	Length (m)	Width (m)	Total depth (m)	Depth below ground level (m)	**NRCB USE ONLY** Calculated storage capacity (m^3)
1.	74	25	1.3	1	2,405
2.					
3.					
				TOTAL CAPACITY	2,405

Concrete liner details

Scrape alleys or unslatted portions of barn floors (if applicable) N/A	~~Concrete thickness~~ 8 inch	~~Method of sulphate protection~~ type 50 cement	
	Concrete strength 32 mpa	Concrete reinforcement size and spacing 16" on center	
In-barn manure pit floors	~~Concrete thickness~~ 6"	~~Method of sulphate protection~~ type 50 cement	
	Concrete strength 32 mpa	Concrete reinforcement size and spacing 16" on center	
In-barn manure pit walls	~~Concrete thickness~~ 6"	~~Method of sulphate protection~~ type 50 cement	
	Concrete strength 32 mpa	Horizontal reinforcement size and spacing 16" on Center	Vertical reinforcement size and spacing 16" on center

LIQUID MANURE COLLECTION AND/OR STORAGE: In-barn - Concrete liner (cont.)

Describe how the joints at the junction of the pit walls, pit floors and any other joints will be sealed

Water Stop

Describe sealing practices for piping, etc. that penetrates the liner

Water Stop

Concrete requirements can be found in Technical Guideline Agdex 096-93
Guideline minimums:
Solid manure (wet): 30MPa (C)
Liquid manure: 32MPa (B)
Category A is required to be engineered
Method of sulphate protection:
Type 50 or Type 10 with fly ash or equivalent

NRCB USE ONLY

Requirements met: ☑ YES ☐ NO

Condition required: ☑ YES ☐ NO

Additional information

NRCB USE ONLY

Liquid manure storage volume calculator attached: ☑ YES ☐ NO

Depth to water table: 9 m — Requirements met: ☑ YES ☐ NO

Depth to uppermost groundwater resource: 31 mbgs — Requirements met: ☑ YES ☐ NO

ERST completed: ☑ see ERST page for details

Concrete liner requirements

Leakage detection system required: ☐ YES ☑ NO If yes, please explain why

Part 2 — Technical Requirements

NRCB Natural Resources Conservation Board

Application under the *Agricultural Operation Practices Act* for a confined feeding operation, manure collection area and/or manure storage facility(ies)

LIQUID MANURE STORAGE: Earthen manure storage (EMS): Naturally occurring protective layer

*(complete a copy of this section for **EACH** proposed earthen liquid manure storage facility with a naturally occurring protective layer)*

Facility description / name *(as indicated on site plan)* 1. Nav Lagoon

2. _____

Manure storage capacity *(complete a separate row of this table for each cell of the EMS)*

	Length (m)	Width (m)	Total depth (m)	Depth below ground level (m)	Slope run:rise			NRCB USE ONLY	
					Inside end walls	Inside side walls	Outside walls	Calculated storage capacity (m^3) (excl. 0.5 m freeboard)	Filled in lower ¼? Y/N
1.	64	45	7	6	3	3	4	6,893	Yes
2.									
							TOTAL CAPACITY	6,893	

Surface water control systems

Describe the run-on and runoff control system

1m berm to prevent runoff entering lagoon.

Naturally occurring protective layer details Childlake John Lakezoo ± 10m

Thickness of naturally occurring protective layer	3 (m)	Provide details (as required) See attached report	
Soil texture	42 % sand	32 % silt	26 % clay
Hydraulic conductivity - naturally occurring protective layer	Depth and type of soil tested: 3.2 m loam	Hydraulic conductivity (cm/s): 6.7 x 10 -8	Describe test standard used: modified falling head

Additional information *(attach copies of soil test reports)*

NRCB USE ONLY

Requirements met: ☑ YES ☐ NO

Condition required: ☑ YES ☐ NO

Report attached: ☑ YES ☐ NO

Part 2 — Technical Requirements

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Application under the *Agricultural Operation Practices Act* for a confined feeding operation, manure collection area and/or manure storage facility(ies)

NRCB USE ONLY

Liquid manure storage volume calculator attached: ☑ YES ☐ NO

Depth to water table: 9 m Requirements met: ☑ YES ☐ NO

Depth to uppermost groundwater resource: 31 mbgs Requirements met: ☑ YES ☐ NO

Comments:

ERST completed: ☑ see ERST page for details

Surface water control systems

Requirements met: ☑ YES ☐ NO Details/comments:

Naturally occurring protective layer details

Layer specification comments (e.g. description of the layer texture, layer thickness/depth and the methodology used to collect this information such as sand lenses, number, and location of boreholes):

EMS proposed to be 6 mbgs (7 m deep total). Saturated sand lens encountered at 9 m.

Leakage detection system required: ☐ YES ☑ NO If yes, please explain why.

Liquid Manure Storage Volume Calculator

Construction Dimensions of Liquid Manure Storage

* Only cells in blue can be changed.

Overall Dimensions of Liquid Manure Storage			Liquid MS Dimensions
Total Length*4	64.0	m	210 ft
Total Width*4	45.0	m	148 ft
Total Depth*4	7.0	m	23 ft
Design Capacity Depth	*6.50*	m	21 ft
End Slope*4		run:rise	3 run:rise
Side Slope*4		run:rise	3 run:rise
Length of Bottom	22.0	m	72 ft
Width of Bottom	3.0	m	10 ft
			Total Capacity (@tob)
Total Capacity @ top of Bank	*8,253*	m^3	*291,452* ft^3
			1,815,405 Imp. Gal.

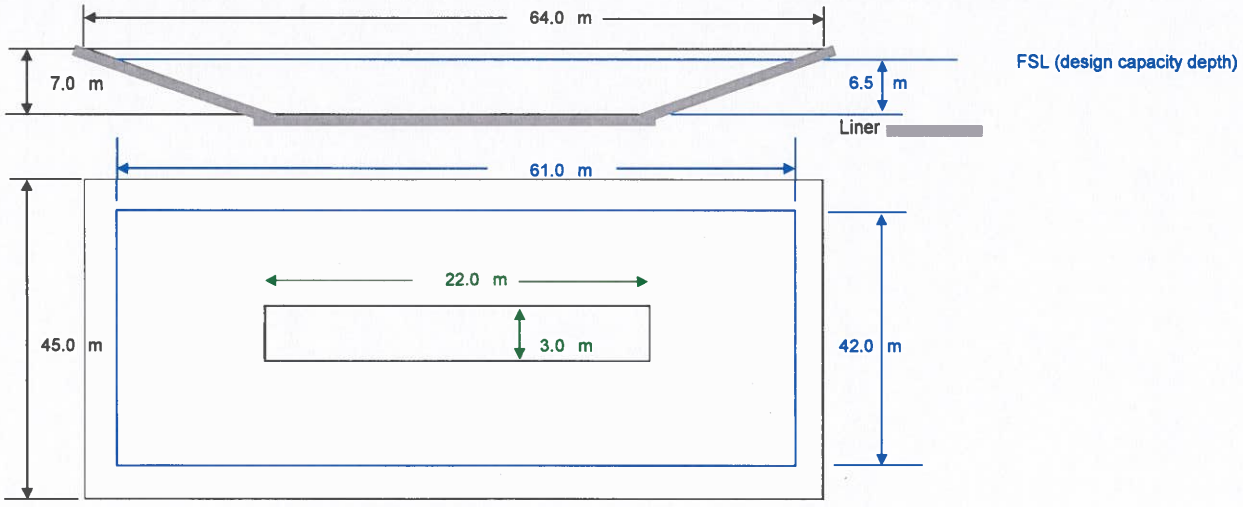
Design Capacity of Liquid Manure Storage (freeboard level)			Design Capacity (freeboard level)
Length (design capacity depth)	61.0	m	200 ft
Width (design capacity depth)	42.0	m	138 ft
Total Depth	*7.0*	m	*23 ft*
Design Capacity Depth	6.50	m	21 ft
End Slope	3	run:rise	3 run:rise
Side Slope	3	run:rise	3 run:rise
Design Capacity (freeboard level)	**6,893**	m^3	**243,433** ft^3
			1,516,302 Imp. Gal.
level)	*2,562*	m^2	*27,577* ft^2

CFO Name 1	Vita Farms
Land Location 1	

Type(s) of Livestock 2	Number of Livestock	Annual Manure Production (m^3/hd)
Sows: Farrow to Finish	400	24.0
N/A		0.0
N/A	0	0.0
N/A	0	0.0
		Total manure Production (m^3/yr)

Minimum 9 Month Liquid Manure Storage Volume Required	
7,200 m^{3**}	**254,266** ft^3
	1,583,778 Imp. Gal.

** Design capacity of liquid manure storage should be equal to, or greater than, minimum 9 month liquid manure storage volume required.



Lines in Black - Overall liquid manure storage dimensions
Lines in Blue - Design capacity depth dimensions (excludes freeboard)

NTS - Not To Scale

Part 2 — Technical Requirements

Application under the *Agricultural Operation Practices Act* for a confined feeding operation, manure collection area and/or manure storage facility(ies)

NRCB USE ONLY

LIQUID MANURE STORAGE VOLUME CALCULATOR (if applicable)

Facility 1			
Name / description	Finishing barn	Capacity	2,405 m3
Facility 2			
Name / description	EMS	Capacity	6,893 m3
Facility 3			
Name / description		Capacity	
Facility 4			
Name / description		Capacity	
TOTAL CAPACITY			9,298 m3
REQUIRED 9 MONTH STORAGE CAPACITY			7,200 m3
MEETS THE REQUIREMENTS FOR A MINIMUM OF 9 MONTHS STORAGE			☑ YES ☐ NO

JLECS

28 March 2025

J Lobbezoo Engineering & Consulting Services Ltd.
PO Box 96, Monarch, AB T0L1M0

JLECS File: P25022

Vita Farms Ltd.
PO Box 671
Coaldale, Alberta T1M 1M6

Attention: Mr. Wayne Kampert

Re: Geotechnical Review and Evaluation
NRCB Permitting of Proposed Manure Storage Lagoon
SW-35-008-19-W4M, near Coaldale, Alberta

As requested, J Lobbezoo Engineering & Consulting Services Ltd. (JLECS) has carried out a geotechnical review and evaluation of the above-captioned site relative to the required protection of the groundwater resource, as required by the Agricultural Operation Practices Act, AB Reg. 267/2001 (hereinafter referred to as "AOPA"). This letter describes the site soil conditions to support a permit application related to a proposed lagoon at the east side of the existing farmyard at the above captioned site (refer to Figure 1, attached).

In order to demonstrate the suitability of the naturally existing soils for consideration as a naturally occurring protective layer to the groundwater resource, four boreholes were advanced at the site on March 10, 2025. The boreholes were advanced at the approximate locations denoted as VF1-25 to VF4-25 on Figure 1, attached.

The boreholes were advanced by a truck-mounted drill rig owned and operated by Chilako Drilling Services and extended to depths of 9.2 m to 15.4 m below the existing grade. The boreholes were logged by Larry Delong of Chilako Drilling Services.

In general, the natural mineral soils encountered in the boreholes consisted of minor lacustrine clay and silty clay overlying stiff, medium plastic clay till. Minor sand lensing and saturated sandy soil was observed below about 9 m depth in boreholes VF1-25 to VF3-25. While groundwater (seepage) was identified in the boreholes below about 9 m depth, no groundwater resource (as defined by the AOPA) was encountered within the upper 9.0 m at this site.

Samples of soil collected from the screened zones of borehole VF4-25, as well as samples from similar depths at the other boreholes were all subjected to grain size analyses, which was carried out by Down to Earth Laboratories in Lethbridge, Alberta. The lab report is attached, for reference. The results indicate a soil texture breakdown of:

Table 1: Soil Texture Analyses

Borehole/Depth	% Sand	% Silt	% Clay
VF1-24 / 9.5 – 10.5 m	46	28	26
VF2-24 / 8.0 – 9.0 m	45	29	26
VF3-24 / 8.0 – 9.0m	44	31	25
VF4-24 / 8.0 – 9.0m	42	32	26
Average:	*44*	*30*	*26*

----JLECS----

To measure the *in situ* permeability of the subsurface soils, a 50 mm diameter PVC monitoring well was constructed in borehole VF4-25. The test well was screened from 6.0 m to 9.2 m depth. Well saturation of the 50 mm diameter monitoring well was carried out by filling the monitoring well to the top for several consecutive days. After three days of testing, a 24-hour water drop of 1.93 m was determined.

To calculate the permeability of the screened portion of the clay strata at the test well location, a modified falling head test (as outlined in the USBR Engineering Geology Field Manual Volume 2 [2001]) was used. The input variables and output data are outlined on the attached In Situ Permeability Test reports. The results of the permeability testing indicated an *in situ* hydraulic conductivity (k_s) of 6.7×10^{-8} cm/s at VF4-25.

Using the measured permeability of the clay at this site, the 3.2 m of clay screened at test hole VF4-25 is estimated to represent the equivalent of about 48 m of naturally occurring materials having a hydraulic conductivity of 1×10^{-6} cm/s (the reference standard in AOPA). This represents natural material protection in excess of the minimum requirements outlined by the AOPA for lagoons (minimum 10 m, Section 9.5-a).

Conclusion

Based on the results of the current investigation, permeability testing, and our understanding of the site and development at the site, it is JLECS's opinion that the naturally occurring materials at the site satisfy the AOPA requirements for permitting the proposed lagoon at this location.

We trust that this report satisfies your present requirements. Should you have any questions, please contact the undersigned at your convenience.

Yours truly,

J Lobbezoo Engineering & Consulting Services Ltd.

PROFESSIONAL ENGINEER JOHN LOBBEZOO ALBERTA 10450

28 March 2025

PERMIT TO PRACTICE
J LOBBEZOO ENGINEERING & CONSULTING SERVICES LTD.
RM SIGNATURE:
RM APEGA ID #: 10450
DATE: 28 March 2025
PERMIT NUMBER: P016456
The Association of Professional Engineers and Geoscientists of Alberta (APEGA)

John Lobbezoo, P.Eng.
Principal Geotechnical Engineer

Attachments
- Figure 1 Borehole Locations
- In Situ Permeability Test Calculations
- Down to Earth Soil Texture Results
- Soil Profile and Parent Material Description, Chilako Drilling Services

JLECS

Figure 1: Site Layout & Borehole Locations

Image Credit: Google

VF4-25

In Situ Permeability Test

Modified Falling Head Permeability Equation

$$K_s = \frac{r^2}{2\ell\Delta t}\left[\frac{\sinh^{-1}\frac{\ell}{r_e}}{2}\ln\left[\frac{2H_1-\ell}{2H_2-\ell}\right]-\ln\left[\frac{2H_1H_2-\ell H_2}{2H_1H_2-\ell H_1}\right]\right]$$

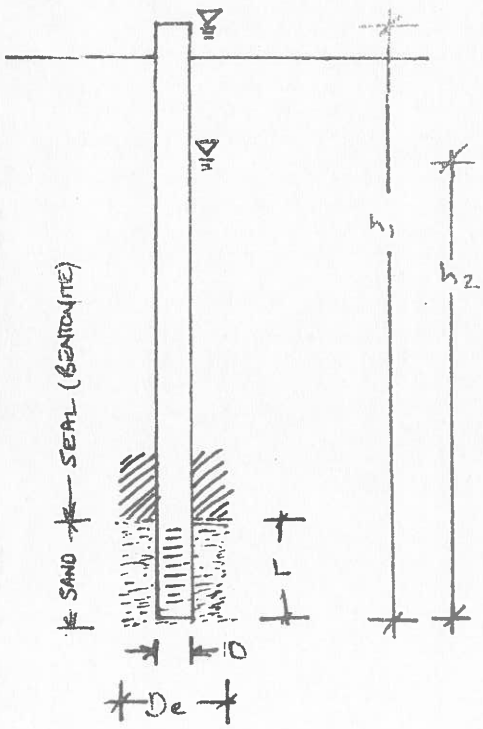
taken from USBR Engineering Geology Field Manual Volume 2 (2001)

VF4-25 - Vita Farms Ltd.

JLECS File: P25022

INPUT VARIABLES	Terms	Value	Definition
	D	0.0520	diameter of standpipe (m)
	De	0.1500	diameter of borehole (m)
	L	3.20	length of sand section (m)
	h1	9.80	initial height of water above base of hole (m)
	h2	7.87	final height of water above base of hole (m)
	t	24.0	time of test (h)

k_s =	6.7E-08 cm/sec



CHILAKO DRILLING SERVICES LTD

Box 942 Coaldale, Alberta, T1M 1M8
(403) 345-3710

SOIL PROFILE AND PARENT MATERIAL DESCRIPTION

Site Location: SW35-8-19W4, Vita Farms Date: 10-Mar-25

Hole #	Location	Depth	Texture	Moisture	Geological	Sample	Remarks
VF1-25	0393303	0-0.15	CL	M	Topsoil		
	5505299	0.15-0.7	SiCL	M	Lac		
		0.7-3.2	CL	M	Till		Stiff, med plastic, brown, a few pebbles
		3.2-6.4	CL-C	M	Till		Stiff, med plastic, yellow brown, oxidized
		6.4-11.0	C	SM	Till	9.5-10.5	Stiff, med plastic, brown, gray mottling, oxidized
		11.0-12.5	C	SM	Till		V stiff, med plastic, gray, oxidized
		11.0					Free water
		12.5-13.5	CL-SCL	Sat	Till	12.5-13.0	Low plastic, olive brown
		13.5-15.4	C	M	Till		Stiff, med plastic, brown
VF2-25	0393304	0-0.15	CL	M	Topsoil		
	5505340	0.15-0.7	SiCL	M	Lac		
		0.7-2.6	CL	M	Till		Stiff, med plastic, brown
		2.6-4.5	CL-C	M	Till		Stiff, med plastic, brown
		4.5-6.2	CL-C	M	Till		Stiff, med plastic, yellow brown
		6.2-11.0	CL-C	SM	Till	8.0-9.0	Stiff, med plastic, brown, gray mottling, oxidized
		9.0	S	Sat			Sat sand lens
		11.0-11.5	CL-SCL	M	Till		
		11.5-15.0	C	M	Till	11.5-13.0	Stiff, med plastic, gray, oxidized
VF3-25	0393259	0-0.15	CL	D	Topsoil		
	5505341	0.15-0.7	SiCL	D	Lac		
		0.7-2.4	CL	M	Till		Stiff, med plastic, brown
		2.4-5.0	CL-C	M	Till		Stiff, med plastic, brown
		5.0-7.2	CL-C	M	Till		Stiff, med plastic, brown, oxidized
		7.2-9.0	C	M	Till	8.0-9.0	Stiff, med plastic, yellow brown
		9.0-9.1	SL	M	Till		Sand pocket
		9.1-10.6	C	M	Till		Stiff, med plastic, dark brown, gray mottles oxidized
		10.6-12.4	C	M	Till		Stiff, med plastic, dark brown, gray mottles
							Sat sand lensing, free water @ 10.6m
		12.4-15.0	C	M	Till		Stiff, med plastic, dark brown
							Free water @ 10.6m
VF4-25	0393254	0-0.15	CL	M	Topsoil		
	5505296	0.15-0.7	SiCL	M	Lac		
		0.7-3.0	CL	M	Till		Stiff, med plastic, brown
		3.0-6.0	CL	M	Till		Stiff, med plastic, yellow brown
		6.0-9.2	CL-C	M	Till	8.0-9.0	Stiff, med plastic, brown, oxidized
							50mm H.C. well installed to 9.2m BGS
							Screen: 9.2-6.2m
							Sand: 9.2-6.0m
							Bentonite: 6.0-0.0m
							Stickup: 0.6m
							Hole Diameter: 0.15m

Legend:
- L Loam
- C Clay
- S Sand
- Gr. Gravel
- Si Silt
- F Fine (sand)
- VF Very Fine (sand)

Eg. VFSCL = Very Fine Sandy Clay Loam

Part 2 — Technical Requirements

NRCB Natural Resources Conservation Board

Application under the *Agricultural Operation Practices Act* for a confined feeding operation, manure collection area, and/or manure storage facility(ies)

NRCB USE ONLY

ALL SIGNATURES IN FILE ☑ YES ☐ NO

DATES OF APPROVAL OFFICER SITE VISITS

April 28, 2025	

CORRESPONDENCE WITH MUNICIPALITIES AND REFERRAL AGENCIES

Date deeming letters sent: May 13, 2025

Municipality: Lethbridge County

☑ letter sent ☑ response received ☑ written/email ☐ verbal ☐ no comments received

Alberta Health Services: ☑ **N/A**

☐ letter sent ☐ response received ☐ written/email ☐ verbal ☐ no comments received

Alberta Environment and Parks: ☐ N/A

☑ letter sent ☐ response received ☐ written/email ☐ verbal ☑ no comments received

Alberta Transportation: ☐ N/A

☑ letter sent ☑ response received ☑ written/email ☐ verbal ☐ no comments received

Alberta Regulatory Services: ☑ N/A

☐ letter sent ☐ response received ☐ written/email ☐ verbal ☐ no comments received

Other: SMRID, ATCO Gas and Pipelines ☐ N/A

☑ letter sent ☐ response received ☐ written/email ☐ verbal ☑ no comments received

Other: _____ ☐ N/A

☐ letter sent ☐ response received ☐ written/email ☐ verbal ☐ no comments received